

ABSTRACT

PREVALENCE OF PULMONARY HYPERTENSION IN PATIENTS WITH GFR LESS THAN 30 ML/MIN PER 1.73 METER SQUARE ON DIALYSIS

INTRODUCTION:

Inspire of having advancement in field which helps in diagnosing pulmonary hypertension, it remains the disease that takes lot of time for diagnosis from the presence of first symptom, many patients are diagnosed only in advanced stage of disease.¹ Normal pressure in pulmonary artery is 25/10mmHg if the pulmonary artery pressure exceeds 40/20mmhg or average pressure exceeds 25mmHg, then the pulmonary hypertension is present. If the pressure in the pulmonary artery is persistently high then the right ventricle of the heart, from which the pulmonary artery arises, will not be able to pump properly and then the symptoms of right heart failure will occur². Pulmonary artery pressure is increased by many conditions and pulmonary hypertension was classified accordingly. Prevalence of pulmonary artery hypertension of WHO class1 which is caused mainly by connective tissue disorder, drug, and toxic agents is 15 cases/million adult population^{3, 4}.Prevalence of idiopathic pulmonary artery hypertension 5.9cases/million adult population^{5, 6, 7, 8}.

- Pulmonary hypertension due to systemic sclerosis is 7-12%^{9, 10}
- Pulmonary hypertension due to portal hypertension is 2-16%^{11, 12}
- Pulmonary hypertension due to congenital heart disease is 30%¹³
- Pulmonary hypertension in sleep apnea is 15-20%¹⁴

Up to 60%,70% of the patients with severe left ventricular systolic dysfunction, heart failure with preserved ejection fraction may present with pulmonary hypertension respectively. Almost all the patient's mitral value diseases have pulmonary hypertension and 65% of those with symptomatic aortic stenosis also will have pulmonary hypertension^{15, 16, and 17}.

Chronic thrombo embolic pulmonary hypertension (CTEPH) prevalence was 3.2cases/million /year and incidents were 0.9cases/million/year. Severe pulmonary hypertension is uncommon in this conditions, severe pulmonary hypertension is only present in combined emphysema/fibrosis syndrome. A large survey that is conducted in united states that registered information from all form of pulmonary hypertension from 1980-2002 documented that death rate in patients with pulmonary hypertension during these time were stable and ranging from 5.2-5.4deaths/1,00,000^{18, 19, 20, 21}.

AIM:

To find Prevalence of pulmonary hypertension in end stage renal disease on dialysis.

STUDY DESIGN:

Hospital based prospective observational study

SAMPLE SIZE: 50

INCLUSION CRITERIA:

- Age >18 years
- Patients with GFR less than 30 ml/min per 1.73 meter square

EXCLUSION CRITERIA :

- Patients with Ejection fraction less than 45%
- k/c/o chronic lung disease (chronic obstructive lung disease, interstitial lung disease, mixed obstructive & restrictive physiology).
- Patients with chronic thrombo embolic disease
- k/c/o sarcoidosis,
- k/c/o sickle cell disease,
- k/c/o HIV,
- k/c/o connective tissue disorder,
- k/c/o sleep disordered breathing,
- k/c/o portal hypertension ,
- k/c/o congenital heart disease

METHODOLOGY

The study is based on the prospective collection of patients aged more than 18 years who fulfilled the inclusion criteria stated above with GFR less than 30 ml/min per 1.73 meter square on dialysis, who were admitted in tertiary care centre (PSGIMSR) and found to have pulmonary hypertension on echo during the study period of one year between august 2016 to august 2017, are taken in to consideration for the study , where systemic computer coding for

registry is used. A Performa was made which included the detailed history clinical examination requisite investigations available in the hospital. After taking informed consent from the patient, history and risk factor attributed to pulmonary hypertension in our study group are collected in detail. Investigations like complete hemogram, routine urine analysis, blood sugar, serum electrolyte, serum creatinine, blood urea, thyroid profile, liver function test, ultrasound abdomen and pelvis, retroviral serology, hepatitis B and C serology, chest X-ray, echocardiogram, electrocardiogram were done. GFR is calculated with the help of Cockcroft-gault formula. Diagnosis of pulmonary hypertension is made with the help of echocardiogram (if RVSP more than 50). Finally the prevalence of pulmonary hypertension and the significance of risk factor association with pulmonary hypertension is calculated, descriptive and statistical analysis and interpretation of the data collected is done.

RESULTS

In this prospective observational study conducted in PSGIMSR during the period of august 2016 to august 2017 we included total of 50 patients who were admitted in medical, nephrology ward and intensive care unit fulfilling inclusion criteria and in whom echo was done during the admission. Prevalence of PH in patients with GFR less than 30 is 22 percentage.

CONCLUSION

Prevalence of pulmonary hypertension in our study is 22 percentage. The risk factors like age, sex, diabetes, systemic hypertension, mild LVD, AVF, superimposed infection, volume overload, anaemia, LVDD has no influence on PH in our study. Only association that we have in our study population in patients with PH is longer duration of dialysis.

Keywords: Pulmonary Hypertension, Artery Pressure Chronic Thrombo Embolic Pulmonary Hypertension